

HP.S.E BRISTOL

Miss Gibbs

ELECTRONIC EFFECTS

PRODUCED BY

TELEVISION TECHNICAL OPERATIONS

I N T R O D U C T I O N

These notes have been compiled from actual programmes and experiments carried out during the preparation of the CSO demonstration tape.

The enthusiasm and imagination of those involved with Electronic Effects inspired these developments, particularly those enabling the reproduction of shadows and the glass-smoke overlay system.

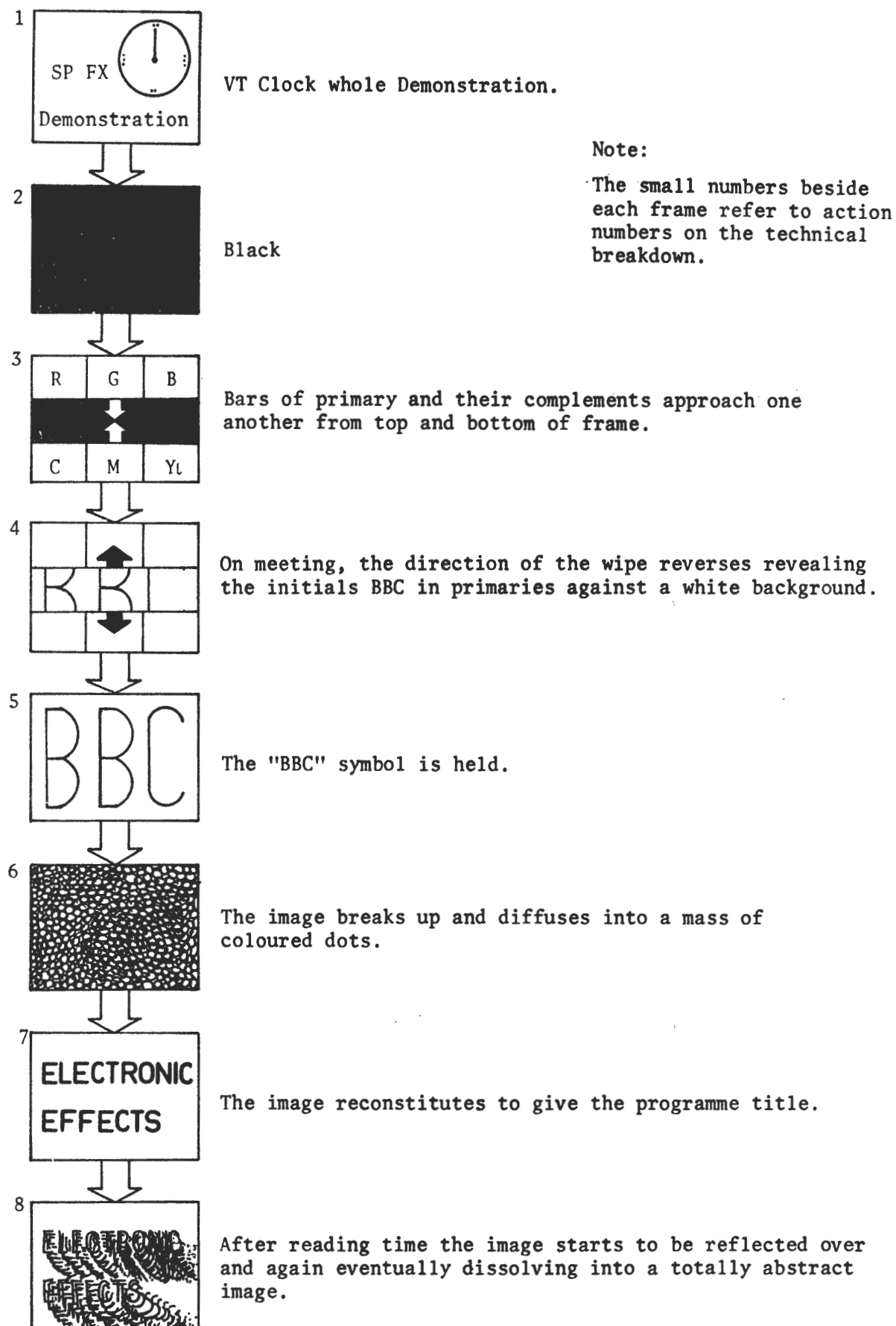
Under controlled conditions all the effects described in this pamphlet can be used in the studios at the Television Centre.

Robert Wright
Vision Manager

Issued by: Television Technical Operations

C O N T E N T S

- (1) Storyboard and description of method used in the production of the opening titles for CSO demonstration.
- (2) Humpty Dumpty from "Alice".
- (3) Electronically produced Monster for "Dr. Who".
- (4) Line outline effect (Studios not equipped with new BBC mixer).
- (5) Line outline effect (Studios equipped with new BBC mixer).
- (6) CSO with Shadow Reproduction : Method 1.
- (7) CSO with Shadow Reproduction : Method 2.
- (8) Glass-Smoke overlay system.
- (9) Sample storyboard of VT build-up as produced by Electronic Effects Operators.

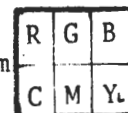
NOTE

The outlined image of a hand infilled with the BBC logo (originally for use elsewhere) seemed to be a good addition to the above and was subsequently added, during editing, to the start of the sequence.

12.12.75

TECHNICAL BREAKDOWNCAMERAS

- Camera 1 CS full frame of a monitor on widest possible angle.
 2 Caption "Electronic Effects".
 3 Caption "BBC" (each letter in one of 'RGB') against a plain white ground.
 4 Caption made up of bars of colour disposed in diagram
 5 The VT clock.



SCHEDULE At start line up cam '4's caption so that centre bar coincides with closing position of mixers $\overline{\downarrow}$ wipe; then line up centre of SP FX blades wipe to '4's caption.

1st PASS (Record on VT"A" Vision and Sound)

Preliminary Selections

Mixer: Group in Wipe Mode, "A" Bank Cam 5, "B" Bank SP FX
 Desk Inlay: "A" Side Cam 4 "B" Side Cam 1. Blade wipes set to show "A" Side.

Actions

- 1 Cut to "A" Bank.
- 2 Cut to Black on "A" Bank.
- 3 $\overline{\downarrow}$ from "A" to "B" and hold.

2nd PASS (Record on VT"B")

Preliminary Selections

Mixer: Group in Mix Mode, "A" Bank SP FX "B" Bank Cam 3 (Pre-Bus to Monitor).
 Desk Inlay: "A" Side VT"A" (Pass 1) "B" Side Cam 1 Blade wipes set to show "A" Side.

Actions Run VT"A"

- 4 Cut to "A" Bank, Desk Inlay wipes from A to B simulating continued motion of step 3.
- 5 Cam 1 as revealed by step 4.
- 6 Simultaneously Cam 3 defocusses; Cam 1 zooms in to tightest shot
- 7 "B" Bank mix to Cam 2 (out of focus).
 Simultaneously: Cam 2 focusses up and Cam 1 zooms out to full frame.
- 8 Fade-up Cam 1 on "B" Bank causing a "howl".
- 9 Fade out Cam 2 leaving an abstract coloured "howl".

TECHNICAL REQUIREMENTS

A. EQUIPMENT:

Black Matrix monitor (fed with preview-bus) (surrounded by blacks),
 Portable vidicon rostrum camera keying SP FX switch,
 A "Black Level" source available on SP FX inputs,
 A "White" source available on SP FX inputs

$\overline{\downarrow}$ blades wipe.

Camera '1' A "K" lens and possibly with tube focus misaligned.

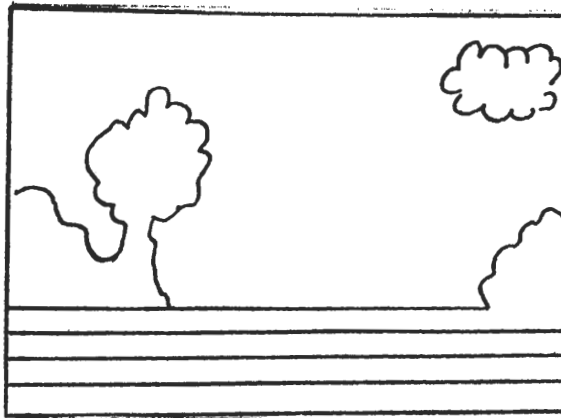
B. VT MACHINES:

VTA needs to be record/replay capable.

The composite shot of Humpty Dumpty was a combination of 3 cameras.

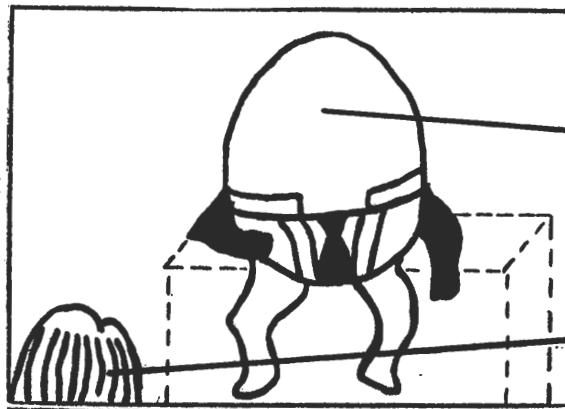
CAMERA ONE

This took a shot of the background caption.



CAMERA TWO

This took a shot of a large scale egg containing an artist, who provided moving arms and legs, and with a plain white "face". Alice's head is in f/g left, All this is against O/L blue.

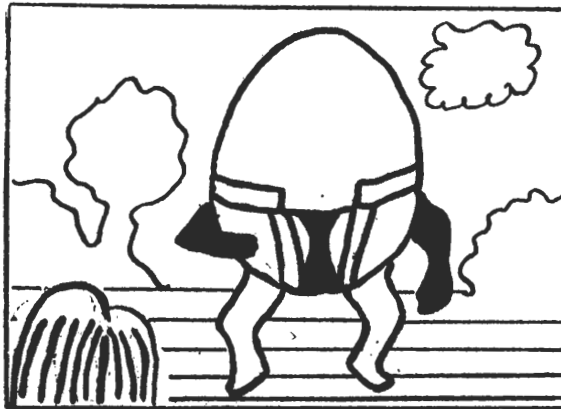


Faceless egg on blue rostrum

Alice in f/g

OVERLAY ONE

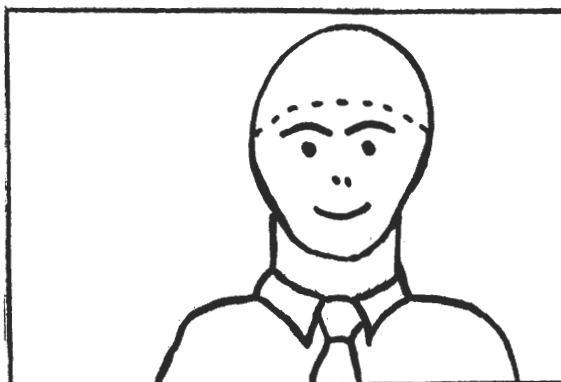
A composite shot of the caption, Alice and the faceless "Egg".



CAMERA THREE

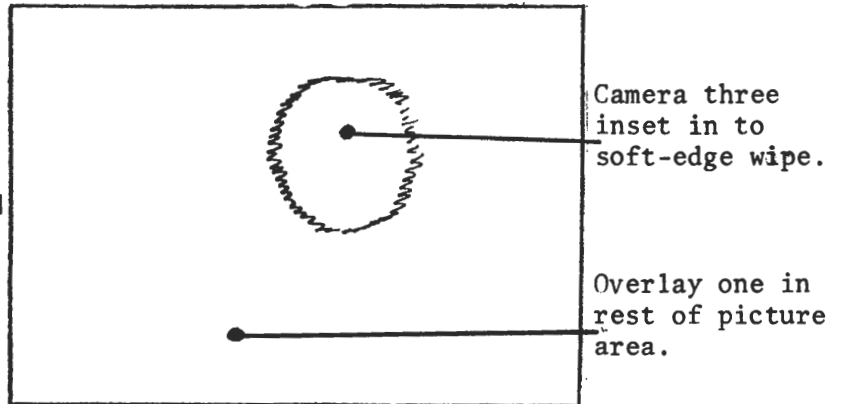
This took a shot of the artist whose face was to appear on the egg, and who was wearing a bladder to produce a bald head.

This shot was taken against a neutral backing.



Artist wearing bladder and white make-up against neutral background

A soft-edge wipe was then used, in the position shown here, between camera three, inside the wipe, and overlay one. Camera three then adjusted his shot to fill the soft-edge wipe with the artists face.

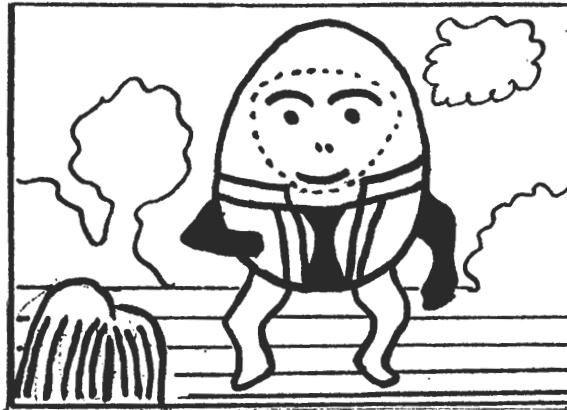


This then produced

COMPOSITE SHOT ONE

containing face, egg, Alice and the background caption.

Lighting on the egg and the artist's face was then carefully balanced to match the egg and face thus rendering the wipe invisible.



To "soften" the features of the face, a mix was then done between overlay one & composite shot one, in the approx proportions of;

Composite	80%
Overlay one	20%

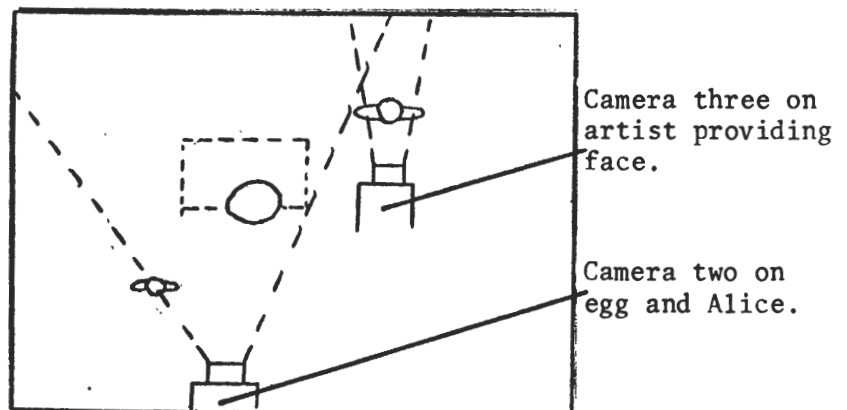
This then produced the final shot.

In the absence of information to the contrary, any movement of the artists face appeared to be a movement of the whole of the top of the egg.

It is worth noting the studio layout for this set up.

STUDIO LAYOUT PLAN

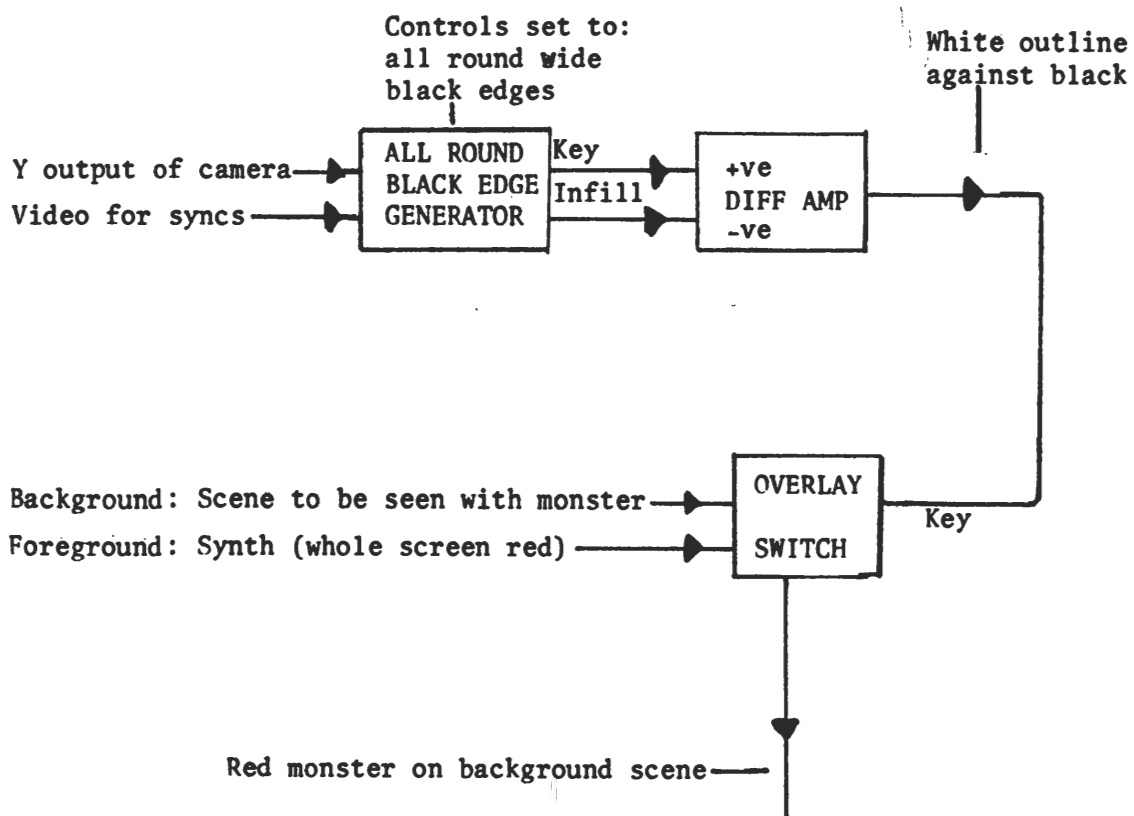
By positioning the artists as shown, the face could look at and react to Alice, and v.v.



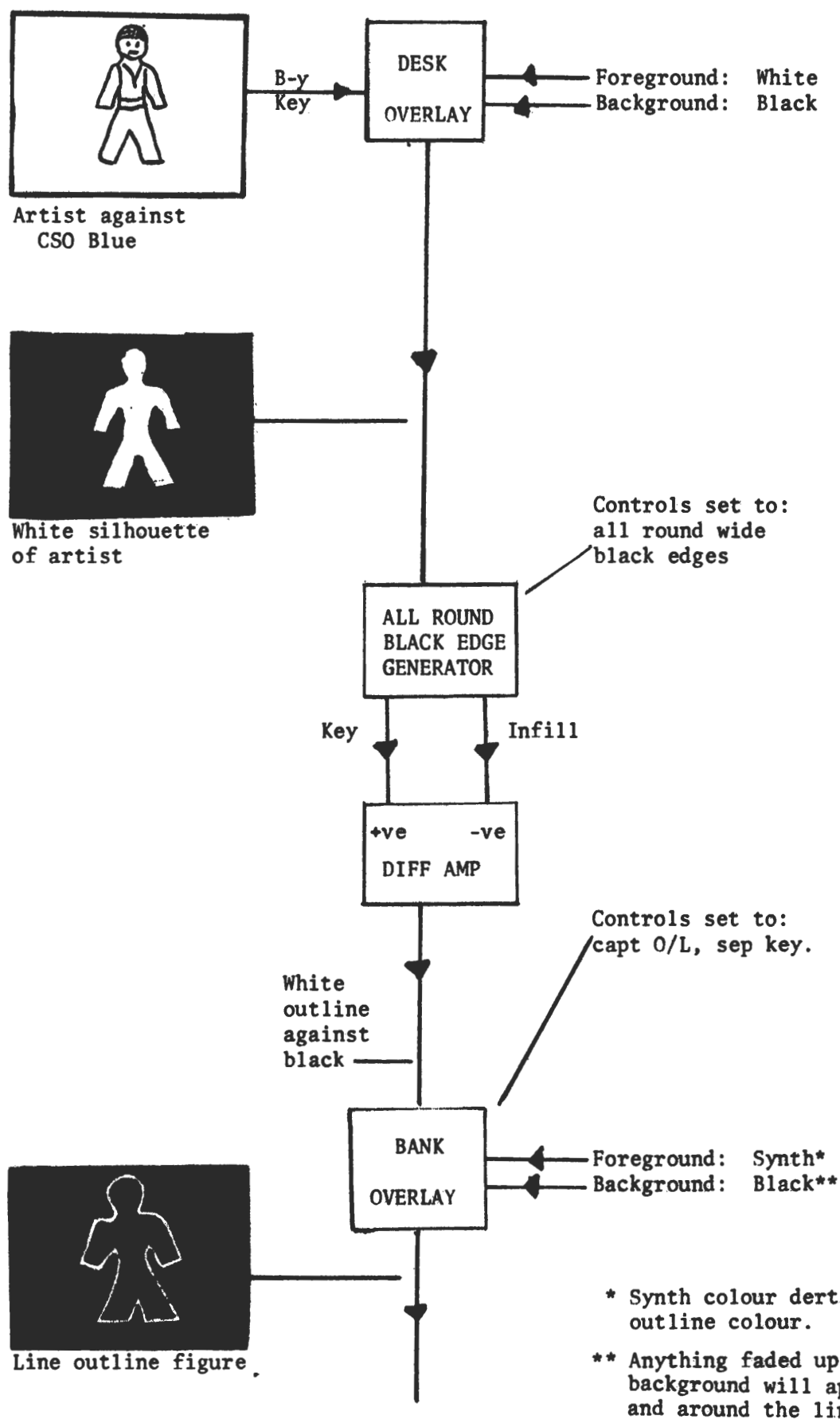
The eye line from Alice to the egg is then close to the eye line from Alice to the artist providing the face.

ELECTRONICALLY PRODUCED MONSTER FOR DR WHO

The effect required was of a red edged transparent creature, the monster was dressed in white and was shot against a black backing. The Y output of the camera was used via an all round black edge generator, the infill signal was then subtracted from the wider key signal; the output (being a white outline against black) then keyed an overlay between the colour synthesiser and the background picture.

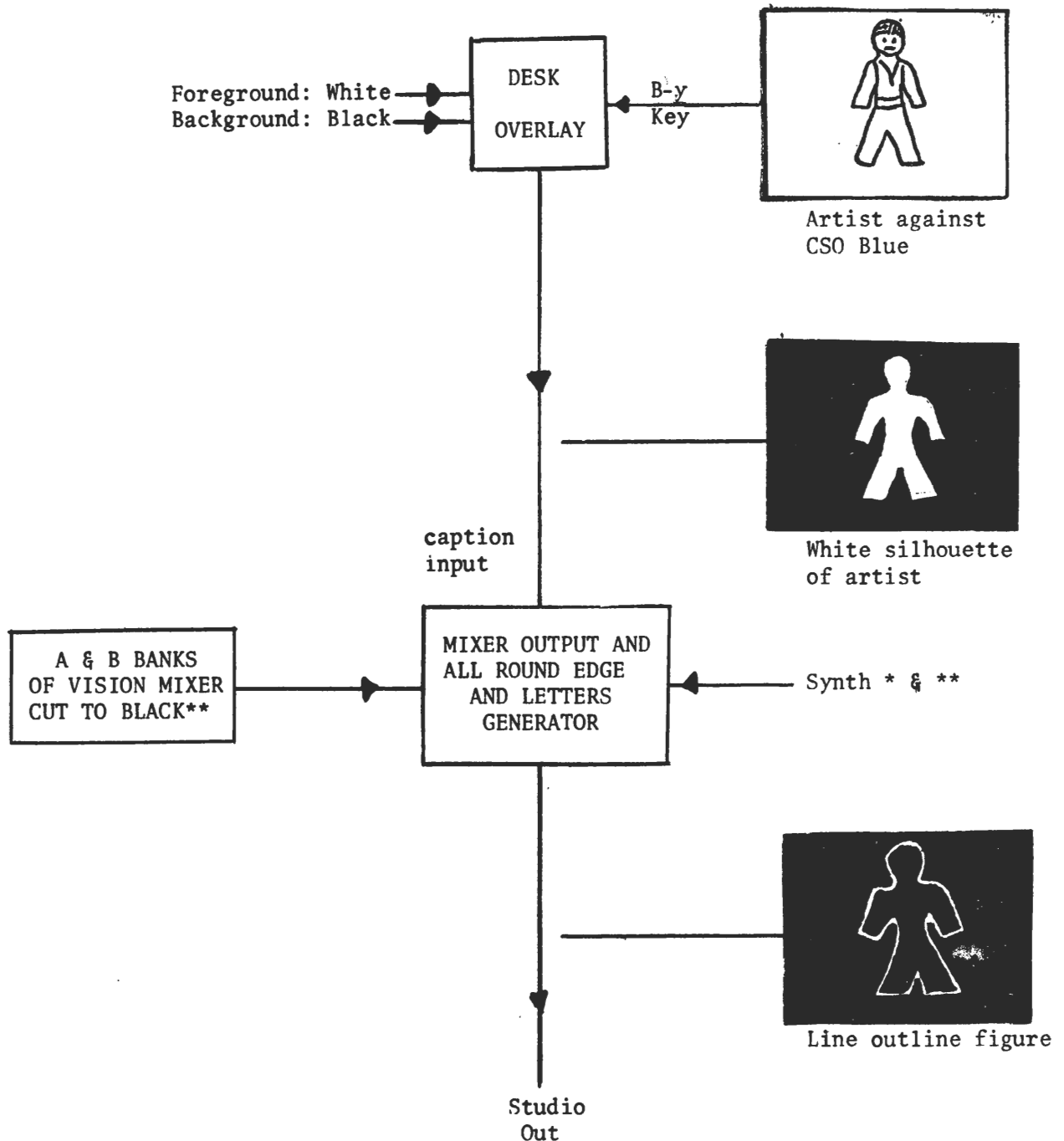


The shape of the outline is adjusted by alterations to, the clipping control on the control box, and the sit and exposure of the input camera.

LINE OUTLINE EFFECTStudios with Desk and Bank Overlay but without new Mixer

LINE OUTLINE EFFECT

Studios with Desk Overlay and new Mixer



* Synth 'background' colour determines final outline colour.

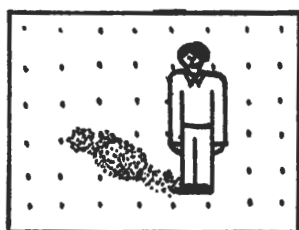
** Anything faded upon the vision mixer will appear around the outside of the outline figure, the colour of the centre of the figure is determined by the synth 'letters' colour.

CSO WITH SHADOW REPRODUCTION

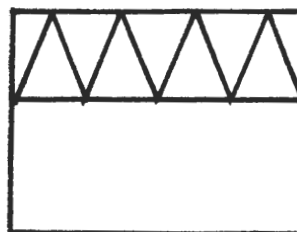
Method 1

The shadows cast in a CSO foreground can be preserved using a 2-switch double overlay system.

The two basic shots required are:



Man against
overlay blue



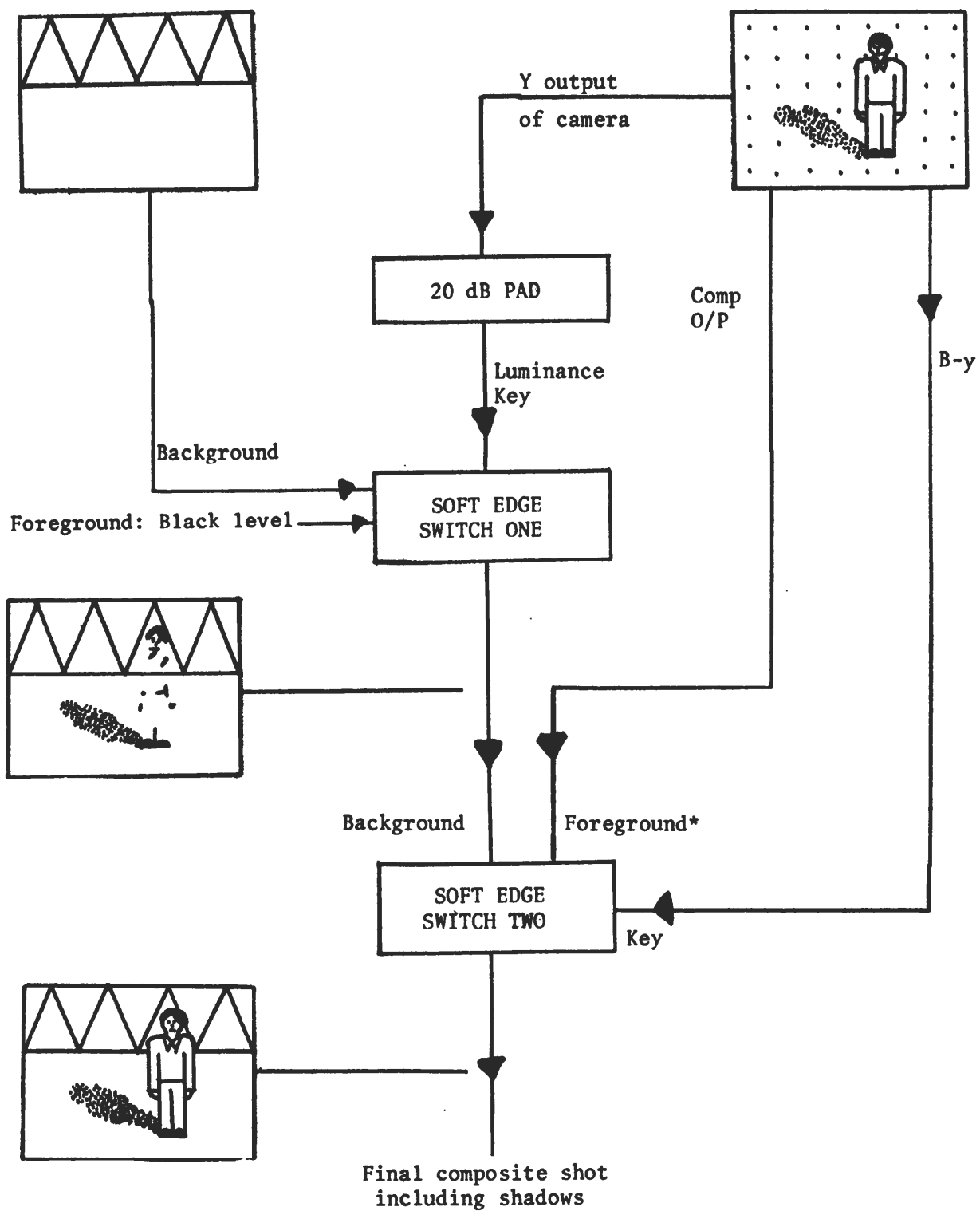
The background
shot

A luminance overlay is done first, this must use an extremely "soft" switch. To achieve this the luminance key (the Y output of the camera looking at the man) is attenuated, nominally by about 20 dB. The foreground is black level and the background is the background shot, the clipper is adjusted for best shadow resolution. The output of switch one is the background and shadows plus some dark holes corresponding to any dark areas on the man e.g. open mouth etc (these will be removed by the next switch).

The output of the first overlay switch is then taken as the background to the second switch, which overlays (B-y) the man into the picture in the normal manner.

Notes:

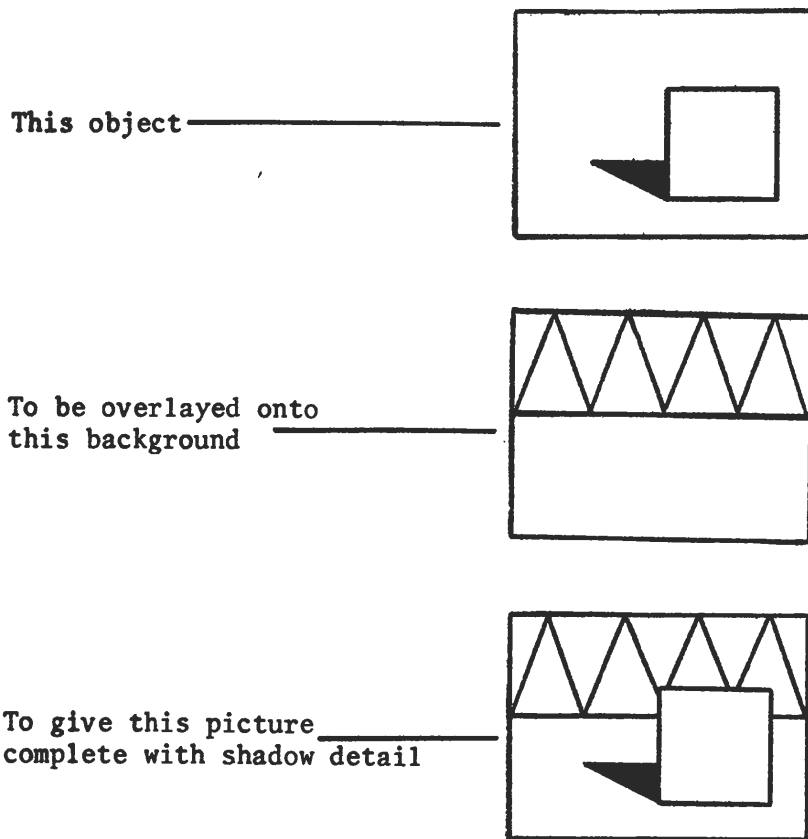
1. The overlay blue area should be as even as possible both with regard to actual construction and lighting, (e.g. the cyc to floor join should be taped and painted, the cyc and floor cloth should be in good condition and match, etc).
2. The shadows of the foreground should not be completely black.
3. All shadows on the overlay area will be transferred to the final shot, e.g. boom shadows etc.
4. The depth of shadows can be controlled by varying the attenuator or the clipper on switch one.
5. It must be stressed that the shadows will not follow any contours on the background shot.
6. The fringe eliminator may be used with advantage on the foreground to switch two.*



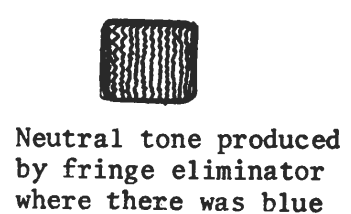
CSO WITH SHADOW REPRODUCTION

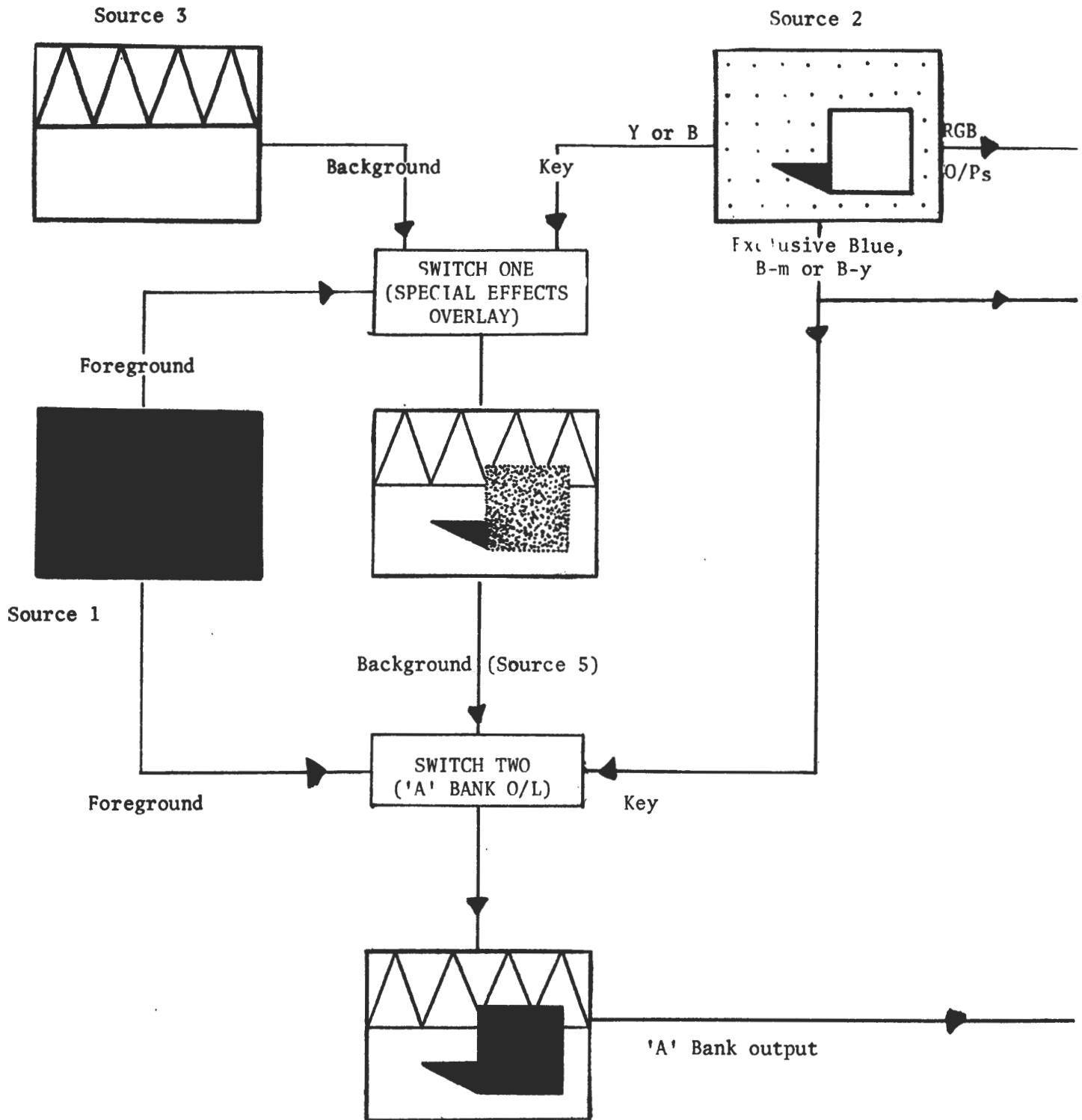
Method 2

This process utilises three switches and combines their outputs to produce a composite picture. The example used to demonstrate the principle; required:



Key for overleaf





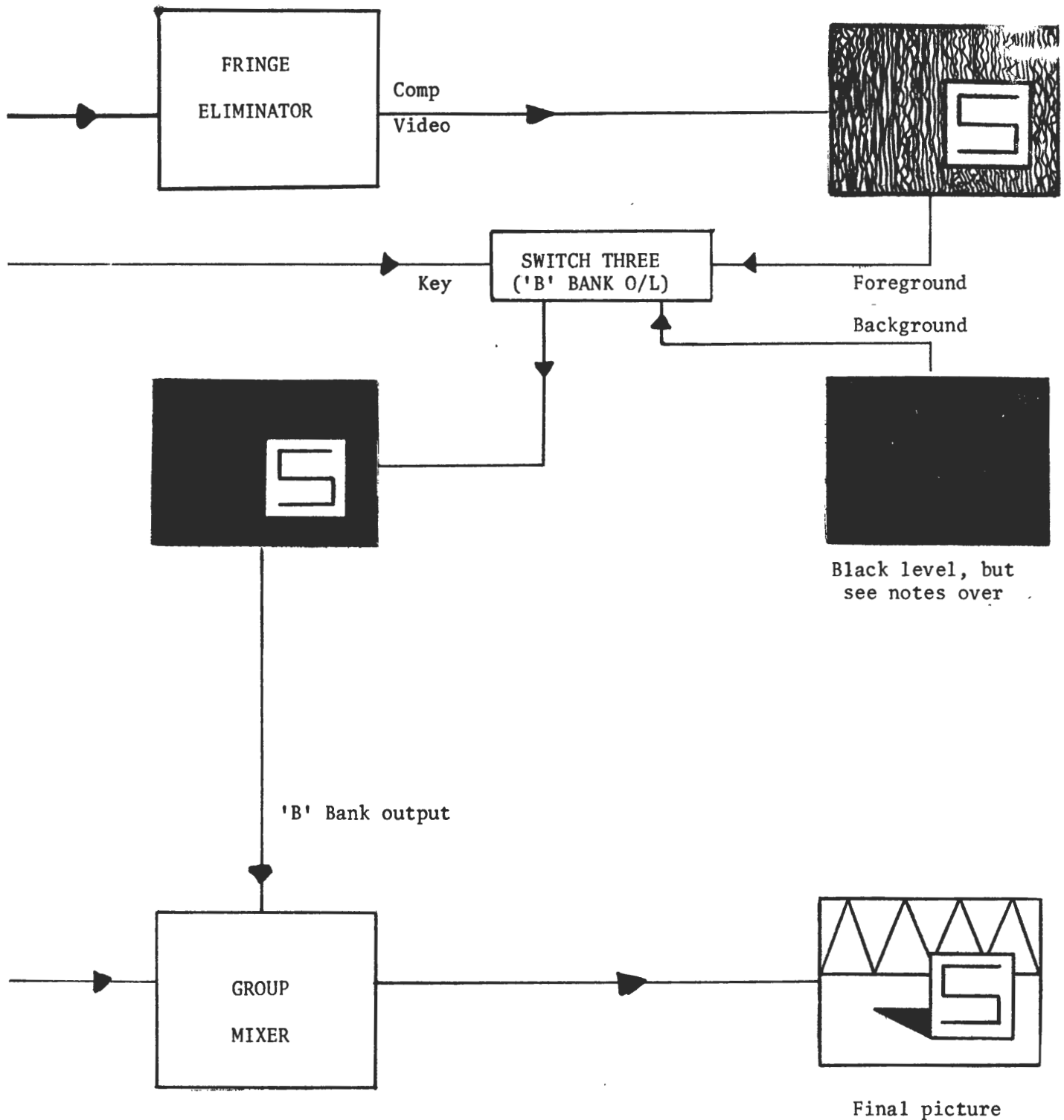
Notes

Switches 1 & 2 are operated in cascade to produce the output background.

Switch 1 is required to produce shadow detail only, the clipping level being adjusted to reproduce shadows as solid black.

Switch 2 replaces the degenerated foreground with black.

Source 4

Notes

The foreground picture to switch 3 has the blue spill removed from it by the fringe eliminator, the same key that was used on switch 2 (the 'A' Bank overlay) is used on switch 3 (the 'B' Bank overlay).

The final composite picture is produced at group level by fading up both the 'A' & 'B' group faders.

CSO WITH SHADOW REPRODUCTIONMethod 2 (continued)SOURCES

- Channel 1. Black level.
2. The foreground object against blue screen.
 3. The background graphic, photo, VT, TK etc.
 4. The output of the fringe eliminator.
 5. The output of the special effects overlay (in this instance).

OPERATION

Both vision mixer 'Banks' should be in the 'mix' mode.
 Black level may be (if not otherwise readily available) provided from a capped-up camera with 'sit'.
 Black level is best produced for switch use, by having 'all' of the 'B' Bank faders 'down'.

To reduce shadow density the 'B' Bank channel 3 fader is taken 'up' whilst simultaneously the channel 5 fader on the 'A' Bank is taken 'down'. This produces a superior result to what at first sight appear to be equally valid adjustments:

- (i) Mixing Ch's 3 & 5 on the 'A' Bank.
- (ii) Maladjusting the switch 1 clipper.

Transparent, ill-clipping or finely detailed objects may be aided by fading 'up' the fringe eliminator (ch.4) on switch 3 (the "B" Bank) background.

The neutral tone produced by the fringe eliminator is dependent on the saturation of the incoming key colour, the more saturated this is then the closer to black level will be the neutral tone. The density of black is important for this usage and so the 'scene' should be very carefully lit for maximum evenness and saturation (preferably by lighting a blue painted backing with blue light).

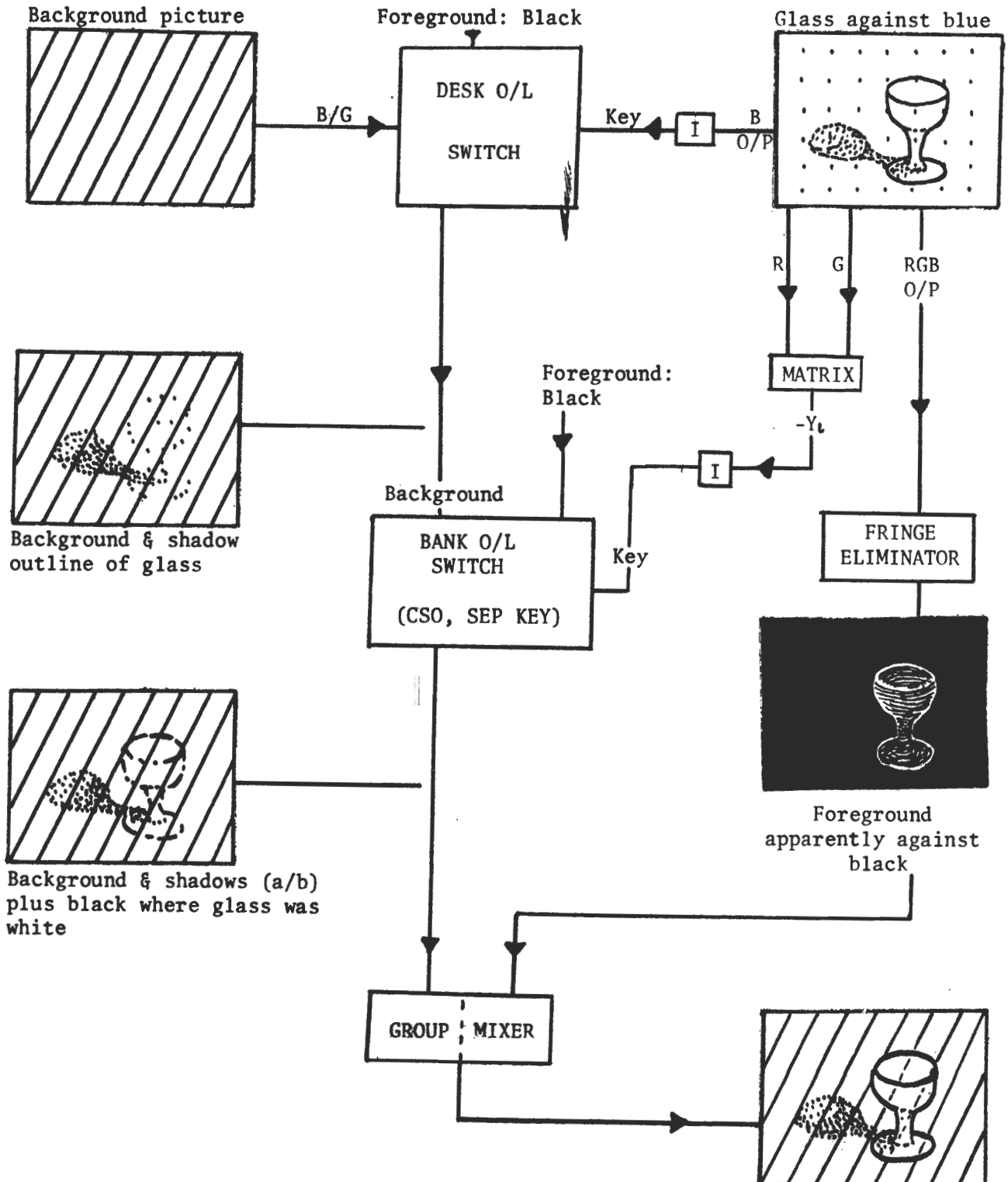
As all the main functions are independently adjustable and both background and foreground effectively have separate clipping (or more correctly threshold) controls, a superior quality overlay is made possible.

GLASS-SMOKE OVERLAY SYSTEM

When a saturated blue is present in a picture fed to the fringe eliminator for blue overlay, the fringe eliminator will reduce this blue to very close to black level. Furthermore, if a transparent object such as a wineglass is placed in front of the saturated blue, the output of the fringe eliminator will show that transparent object apparently against black:

This effect of the fringe eliminator can be used in conjunction with a shadow overlay system to produce, given the right circumstances, a high quality overlay system.

A saturated, even, blue keying colour is essential for this system.

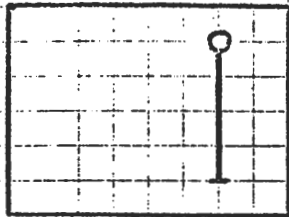


ELECTRONIC EFFECTS DEMO - SEQ. 1. VT BUILD UP

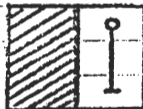
(PROJECT NO. 00818/1900. REC. 1,2,3/09/75. STUDIO TC3).

1ST PASS [RECORDED ON VTA - SOUND + VISION]

CAMERA 1 (LOCKED OFF)



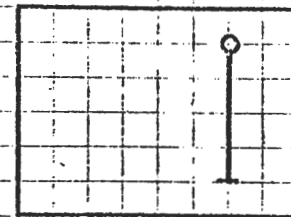
PRE-BUS.



THE SPLIT SCREEN TO JOIN THE TWO IMAGES IS SET UP AND USED AS A GUIDE ON PRE-BUS (OR PREVIEW MONITOR) THE SPLIT IS NOT RECORDED.

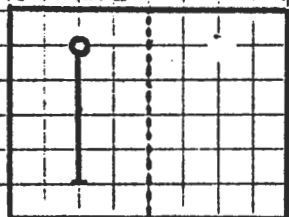
CAMERA 1'S BASIC SHOT IS SET UP AND LOCKED OFF. THE ENTIRE SKETCH IS RECORDED WITH THE ARTIST PLAYING HIS RIGHT HAND SIDE ROLE.

COMPOSITE PICTURE

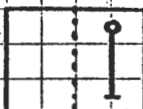


2ND PASS [RECORDED ON VT B - SOUND + VISION]

CAMERA 1 (LOCKED OFF)

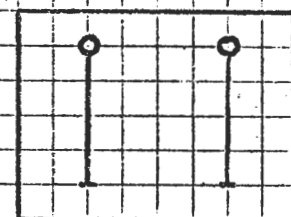


VTA



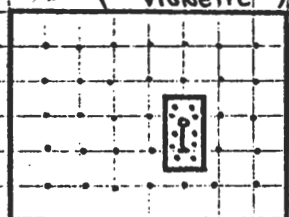
THE PREVIOUSLY RECORDED VT IS PLAYED BACK INTO THE STUDIO. A HORIZ. SPLIT + DUMMY RUN IS USED TO CHECK LINE-UP.

A SPLIT-SCREEN (WITH SOFT VERTICAL DEMARCATION) IS SET UP, VTA REPLAY TO RIGHT AND LIVE STUDIO TO THE LEFT. ARTIST PLAYS HIS LEFT HAND SIDE ROLE.

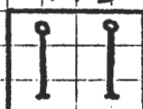


3RD PASS [RECORDED ON VTA - VISION ONLY]

CAM. 1 (LOCKED OFF + VIGNETTE)

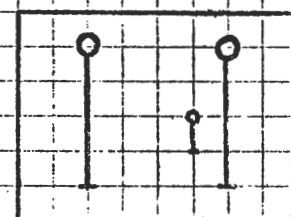


VTB



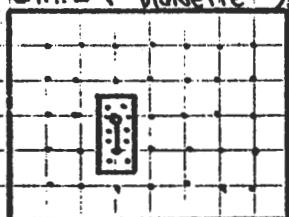
PREVIOUS VT. REPLAYED TO STUDIO.

THE ARTIST NOW STANDS IN FRONT OF A BLUE-SCREEN AND IS OVERLAYED UNTO THE PREVIOUSLY RECORDED MATERIAL. A BLUE VIGNETTE IN FRONT OF CAM. HIDES LIGHTS etc.

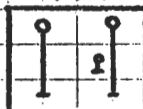


4TH PASS [RECORDED ON VT B - VISION ONLY]

CAM. 1 (LOCKED OFF + VIGNETTE)

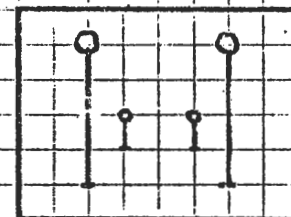


VTA



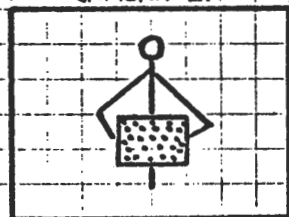
PREVIOUS VT. REPLAYED TO STUDIO.

AGAIN THE ARTIST IS IN FRONT OF BLUE SCREEN TO BE OVERLAYED UNTO PREVIOUS COMPOSITE. HIS NEW POSITION REQUIRES REPOSITIONING OF VIGNETTE.

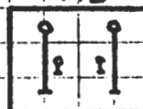


5TH PASS [RECORDED ON VTA - SOUND + VISION]

CAMERA 1.

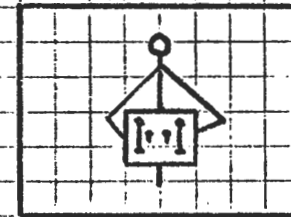


VTB



PREVIOUS VT. REPLAYED TO STUDIO.

CAMERA RETURNS TO SET THE ARTIST HOLDS A BLUE CARD INTO WHICH THE PRE-VT IS INSERTED. WHEN IT ENDS THE CAMERA PULLS OUT AS THE PRESENTER REVOLVES THE CARD TO SHOW A TITLE ON THE OTHER SIDE.



REALISATION

12.12.75

